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of the Silurian rocks of the south mountains, and which is believed to be of the same age as the so called Potomac marble.

Meeting for Business, Nov. 20, 1847.

Vice President MORTON in the Chair.

The Committee on Dr. Hallowell's paper, on the Horned Viper of Western Africa, reported in favor of publication :

On the Horned Viper of Western Africa.

BY EDWARD HALLOWELL, M. D.

CERASTES, Wagler.

Cerastes nasicornis.*

Syn. Coluber nasicornis. Shaw, General Zoology, p. 198.

Characters.—Head short and thick, two horns upon the snout, mouth large ; a series of oblong quadrilateral bands upon the back, margined with triangular spots of black ; a row of dark colored blotches upon each side of the animal in contact with the abdomen ; between these and the triangular lateral blotches, other triangular dark colored spots with their bases toward each other ; tail short.

Descriptions.—Physiognomy very repulsive ; *head* short and thick, depressed, presenting two horns, each four lines in length upon the snout ; opening of the mouth large, extending to within five lines of the posterior margin of the occiput ; two large and powerful fangs on each side of the upper jaw ; head covered with rhomboidal, hexagonal, and polygonal scales which are carinated ; the scales are largest upon the occiput and sides of the head posteriorly ; nostrils large, two lines in diameter, presenting upward and slightly backward ; eyes rather small, latero-superior, on a line with the nostrils, and three lines posterior to them, slightly projecting, looking outward and a little upward ; palatine and infra maxillary teeth recurved, sharp, pointed and strongly developed ; tongue long, bifid enclosed in a sheath; thirteen plates margin the upper jaw on the right, and fourteen on the left side of the head, exclusive of the rostral; the tenth on the right, and the eleventh on the left side are the largest; the shape of both is pentangular; the rostral plate is also pentangular, and incurvated inferiorly; there are sixteen plates along the margin of the lower jaw, exclusive of the mental, which is broad and triangular; the anterior geneials are oblong quadrilateral, the posterior, large and rhomboidal. *Neck* contracted, quite slender compared with the body, which is somewhat cylindrical and very thick in the middle, becoming slender towards the tail; tail quite short; upper part and sides of neck, body and tail covered with very strongly carinated scales; many of these scales are truncated posteriorly.

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* Misprinted *Arastes* in the Proceedings, vol. ii. p. 250.

Color.—Upper part of head light brown ash color; a dark colored triangular blotch exists upon the side of the head, its apex touching the posterior margin of the orbit; another dark colored blotch, an inch in length, extends along the margin of the lower jaw; chin and throat light straw color, with numerous small black spots. A series of oblong quadrangular bands extends along the dorsum, commencing at the neck, and is lost upon the tail; in the young subject they are bordered with white; at each extremity is a dark triangular blotch, the apices of which touch each other: a row of dark colored triangular blotches is also observed along the margins of the quadrangular bars, contiguous with which are other triangular spots, having their bases toward each other; these are not represented in the figure; there is also a row of triangular spots upon each side of the body, in contact with the abdomen: abdomen and under surface of tail straw color, presenting numerous spots of black.

Dimensions.—Length of head 2 inches, 3 lines (Fr.); breadth posteriorly, 2 inches; length of tail, 5 inches 3 lines; length of body, 2 feet 8½ inches (Fr.); greatest circumference of body, 8 inches 3 lines.

Abdominal scuta 128; Subcaudal 27, two of which are single, (the second and third from the anus,) the rest bifid.

Habitat.—Liberia, Western Africa. Specimen in the Museum of the Academy.

General Observations.—The animal from which the above description is taken, was presented to the Academy of Natural Sciences by Dr. Thomas S. Savage, Colonial Physician, and one of our Correspondents. The drawing was taken from a young animal, eighteen inches in length; the coloration, however, does not vary materially from that of the older specimen, except that the general tints are lighter, and in the points indicated. It has no resemblance to the Vipera cornuta, Auct., a beautiful figure of which is given in Dr. Andrew Smith's Illustrations of the Zoology of Southern Africa, plate 32.*

There can be no doubt, we think, that this is the animal figured by Shaw, and described under the name of Coluber nasicornis. The figure of Shaw does not represent the triangular spots at the extremities and sides of the quadrangular bars upon the back, and the form of the head is altogether different; he states, however, that " along the whole length of the back, is placed a series of yellowish brown oblong spots or marks, each of which is imbedded in a patch of black," which, although a somewhat loose description, evidently refers to the species under consideration. Many of the drawings in his Zoology, it is well known, are exceedingly incorrect. It is remarkable that an animal so hideous, and provided with weapons so destructive, should possess the beautiful robe which it presents to the eye. Why this animal, and others among the reptilia, should be thus endowed, is a mystery; for, judging from its formidable head, and powerful fangs, no reptile, not even the Crotalus, or Trigonocephalus, is so deadly. It is also remarkable that animals of this kind should exist in tropical countries associated with the most beautiful of Flora's productions.

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* See Schlegel, Physiognomies des Serpens, tom. ii. p. 583, note.

" Malheur au voyageur, (observes Mons. Spix,) qui ravi de toutes les richesses, qu'une nature enchanteresse déploie autour de lui, se promène dans ces forèts délicieuses, peuplées d'une variété immense d'arbres gigantesques, foule à ses pieds des tapis de verdure, enrichis de mille fleurs odoriférantes, qui parfument l'air et enivrent ses sens; qui élevant sa vue vers la voûte céleste, la porte sur des oiseaux d'un plumage magnifique dont il admire le singulier ramage; qui ailleurs remarque des essaims d'insectes cent fois variês, se confondant dans leur vol folâtre, et offrent á ses yeux déjá frappês d'étonnement, un spectacle nouveau; les rayons du soleil, en les faisant resembler à autant de pierres précieuses, rélevent encore l'êclat de leurs couleurs dêjà si multiplées;—malheur, dis-je, à l'impatient et zêlé naturaliste, qui traverse des mers pour enrichir les sciences de ses observations, lorsqu'assis à l'ombre d'un arbre, aussi ancien que les siecles, couronnê de fleurs magnifiques, telles que Paullinies, Orchides, Gouets, Bromelies et maintes autres, sert de tuteur à des lianes communes à divers arbres, qu'elles semblent rêunir par leur formation de berceaux, servent d'êchelles pour monter à leur sommet élevé, et qui nourrissent en même temps sur leurs troncs un nombre infini de végétaux, il étend sa main pour cueillir une fleur qui se trouve prés d'elle, se sent tout à coup atteint de la morsure d'un Trigonocéphale qu'il â derangé dans sa quiétude;—un poison mortel coule dans ses veines, décompose son sang et son être, et le fait périr d'une mort prématurée, qu'il trouve à trois mille lieues de sa patrie en récompense de son zéle.*"

An account of the habits of this, as well as those of other animals recently presented by him to the Academy, has been promised by Dr. Savage.

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[*] Animalia nova, sive Serpentium Brasiliensium species novæ; par Jean de Spix, p. 51.

The Committee on Dr. Leidy's description of a new genus and species of Fossil Ruminants, reported in favor of publication:

On a new genus and species of fossil Ruminantia: POËBROTHERIUM *Wilsoni.*

BY JOSEPH LEIDY, M. D.

Indirectly, through Mr. J. S. Philips and the influence of Dr. S. G. Morton, the Academy has become the depository of a valuable and unique fossil, received through Dr. S. D. Culbertson, of Chambersburg, Pa., from Mr. Joseph Culbertson.

As first received, it consisted of a mass of argillaceous limestone, having one side of a cranium of an animal exposed to view, which, by the patience of Dr. T. B. Wilson, was relieved of its matrix, and the lower extremity of the humerus, and the upper extremity of the ulna and the radius of the right leg were also disclosed.

The top or vault above the orbits and posterior part of the cranium are wanting, as are also the ossa nasi, ossa intermaxillaria, the part of the os maxillare inferius just anterior to the commencement of the symphysis, and the zygoma of the left side, but sufficient is left to charcterize it as a remarkable genus of *Ruminantia*, very different from any that has been heretofore described.

The cranium belonged to a full grown or adult animal, but not an old one, as is indicated by the teeth.

In the upper jaw are seven molars, differing in this respect from any ruminant known, living or fossil. The posterior three molars, usually called true, present nothing very peculiar in their conformation. They are not so square as in *Cervus*, but are more like those of *Ovis*, being much broader than wide, so that they have a compressed appearance. The four crescents upon the crowns are quite simple. Externally these teeth present two and nearly plane surfaces, separated by an abrupt, salient, longitudinal ridge on a line with the notch separating the anterior and posterior pair of columns. Each of these surfaces has a longitudinal rounded ridge, more prominent upon the anterior than the posterior one, but neither so salient as the first. The antero-external border is also elevated or prominent, so that each of these teeth presents externally four longitudinal ridges. As is usual, these teeth are obliquely situated in the jaw, and the anterior part of one folds over externally or overlaps the posterior part of the one preceding it.

The anterior four molars or premolars are not more than half the length of the true molars, and differ among themselves so as to render it necessary to examine them separately. The posterior or fourth premolar has more the characteristics of a true molar, and it would probably not be wrong to consider it as an additional true molar. The crown presents four crescents, which are thicker than in the true molars, and the anterior and posterior pair are separated by a comparatively deeper notch. Externally the tooth has four ridges corresponding to those of the true molars. The third premolar, or the one immediately preceding the last, has upon its crown a posterior pair of thick crescents, and an anterior cusp which has the appearance of being formed by the blending together of a pair of crescents. Externally it is trilobed, the lobes being separated by two concave depressions. It is shorter but broader than the last. The second premolar is compressed, faintly trilobed, and presents an elongated trenchant crown. The first premolar is the most remarkable characteristic of this cranium. It is separated from the others by a concave notch of .333 of an inch, and is on a line with the anterior mental foramen. It is implanted in the jaw by two fangs, which are divergent and placed one anterior to the other. The body is nearly as broad as the second premolar and is of a compressed pyramidal form, and the crown has a trenchant edge, the posterior and anterior part of which form an angle about its centre.

In the lower jaw, in the specimen, are six inferior molars in a closed row commencing .25 of an inch anterior to the corresponding six molars above, and continuing as far back as the latter. Besides these, and separated from them by a concave descending notch of .45 of an inch, just anterior to the anterior mental foramen, or .15 of an inch anterior to the commencement of the sympyhsis posteriorly, is one half of an alveolus for an additional or seventh molar, which, when the specimen was first received, contained a portion of a fang, since mislaid. This additional molar in the lower jaw is possessed by only one other known genus of *Ruminantia;* the *Dorcatherium*, of Kaup.

The crowns of the inferior molars are enveloped in the matrix in such a manner that they cannot be exposed without endangering the specimen. Externally the three true molars present their columns as sharply triangular prisms, as in *Ovis*, &c., and have no intervening points or cones, as in *Cervus*, *Dorcatherium*, *&c.*

The fourth premolar is tri-lobed externally, each lobe presenting a cusp towards the crown. The third and second are compressed, and the latter, I can perceive, has a trenchant crown.

The position of the molars, though resembling that of *Dorcatherium*, considerably more than that of any other genus of *Ruminantia*, differs materially from it, for while the teeth reach to the symphysis in the latter, in the former they even extend anteriorly to its commencement.

From the foregoing description of the teeth, it will be perceived, that in the possession of a seventh molar in the upper jaw, in the position of the molars, and in several other minor peculiarities, this genus differs from all others heretofore known, and is well characterized, and I therefore propose for it the name of "POËBROTHERIUM."*

The base of the maxilla inferius presents a double curve, and has its anterior, central, and posterior parts very nearly on the same line, so as to give the lower part of the face an unusual degree of squareness. The angle is prolonged upwards and backwards into a well marked and hook-like process similar to that of many *Rodentia* and *Carnivora*, and exists in no other *Ruminantia* excepting the *Camelidæ*. Just above the base, where it curves downwards and backwards, is a short crescentic depression made by the attachment of the masseter muscle. The processus coronoideus has been proportionately about as long as that of the *Ovis aries*. The depression between the processus coronoideus and condyloideus upon the outer face of the ramus is comparatively deep, resembling more that of a carniverous than a ruminating animal. The anterior mental foramen is placed immediately posterior to the commencement of the symphisis. About one inch and a half to posterior to the latter foramen, on a line with the separation of the first true and last premolar, is another and smaller foramen, which is common to most Ruminants.

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* *πόη herba, βρεω pasco, θὴρ fera.*

The ossa maxillaria superiora, below the situation of the ossa nasi, are very much depressed, so as to make this part of the face extremely narrow. Just anterior to this depression is a prominence resembling that produced by the root of the canine tooth of the *Moschus*, although I doubt very much whether this animal had such large canine teeth, if it had any at all, because of the very great narrowness of this part of the face, and the very advanced position of the first premolar.

The infra orbitar foramen is further back or more approached to the orbit than usual, being situated on a line above the fourth premolar.

The anterior part of the orbit is elevated so that the latter looks directly outwards.

The body of the os malæ is narrowed and elongated backwards. The zygoma proper, or that which is posterior to the frontal process of the os malæ, is short.

The meatus auditorius externus borders immediately upon the glenoid cavity. The tympanic bone is inflated and comparatively larger than in *Bos bovis*, *Cervus rufescens*, or any other Ruminant with which I am acquainted. Externally it projects beyond the face of the lower jaw and the meatus externus. Viewed posteriorly, it presents two parallel ampullæ, united anteriorly, and separated posteriorly by a notch, which terminates in a deep depression below for accommodating the processus styloideus.

The portion of os humeri, consisting of the articular surface for the elbow and posterior sigmoid cavity, presents nothing peculiar.

The ulna, where it is broken off about three-fourths of an inch below the articulation, has nearly the same thickness as the radius, and probably has been proportionately larger than usual.

These bones belonged to an animal rather less in size than the *Dorcatherium*.

The species I have designated *Wilsoni*, in honor of Dr. Thomas B. Wilson, the munificent patron of the Natural Sciences.

Probable habit of the animal.—From the evidences of considerable muscular strength in the posterior part of the inferior maxilla and the trenchant crowns of the anterior premolars, it might be supposed that the animal was adapted to eating flesh as part of its food, as was thought by Cuvier to have been probably the case with the *Anoplotherium gracile*, a pachydermous animal having very similar characters, but I should think its general structure would entirely preclude the idea of its having been able to catch living animal prey, and doubt very much whether its food could have been other than vegetable. The anterior trenchant molars were more probably intended for cutting branches and twigs of bushes, or tough grasses, which afterward underwent a finer trituration with the true molars.

The position which the genus should occupy.—Poëbrotherium in its dentition approaches the *Ruminantia* to the *Pachydermata*, for in the number of the molar teeth and the trenchant nature of the anterior premolars it is closely allied to the Xiphodont *Anoplotherium*, while in the true molars it is characteristically Ruminant, and its position would, therefore, probably stand thus : *Dorcatherium*, *Poëbrotherium*, *Anoplotherium*.

Measurements of the head.*

	In.
Meatus auditorius externus to infra orbitar foramen	3.1
From point of hook-like process of inferior maxilla to anterior mental foramen	4.35
Greatest width of orbit	1.15
Narrowest part of face, below ossa nasi	.2
Width at the corono-condyloid depressions of inferior maxilla	1.6
Width at the coronoid processes	2.
Greatest width at the ossa tympani	2.1
Distance between ossa tympani	.375
Width of os tympanum	.85
Length of row formed by the posterior six superior molars	2.5
Notch between the first and second superior premolars	.333
Length of row formed by the posterior six inferior molars	7.
Notch between the first and second inferior premolar	.45

Measurements of superior molar teeth.

	Length.	Breadth.	Thickness.
7th molar	.375	.6	.2
6th "	.4	.55	.25
5th "	.333	.45	.275
4th "	.2	.375	.25
3rd "	.15	.4	.1
2nd "	.1	.35	.1
1st "	.15	.3	.075

Measurements of inferior molar teeth.

	Length.	Breadth.
7th molar	.3	.35
6th "	.3	.5
5th "	.25	.4
4th "	.15	.45
3rd "	.1	.35
2nd "	.1	.35

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* The measurements are taken in English inches and parts of do.

Measurements from bones of fore-leg.

Transverse diameter of lower articular surface of os humeri	.75
Antero-posterior diameter in depressed portion of same	.45
Length of olecranon above the lowest part of the articular surface of the elbow	.95

Explanation of the figures.

No. 1. Cranium of Poëbrotherium Wilsoni.
2. View of the crowns of the superior molar teeth of the right side.
3. Posterior view of the tympanic bone.
4. Fragments of os humeri, ulna, and radius.
No. 5. Section of articular cartilage, from the articular surface of the head of the tibia of Megalonyx laqueatus, highly magnified, as described on page 313.
6. Portion of the crown taken from a fragment of a fossil horse tooth; see page 328.

The Monthly Report of the Corresponding Secretary was read and adopted.

ELECTION.

The Hon. George M. Dallas, Vice President of the United States, John H. B. McClellan, M. D., and John L. Ludlow, M. D., of Philadelphia, were elected *Members.*

Stated Meeting, December 7, 1847.

Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Pecten encyclicus, Rav., from South Carolina. Presented by Dr. Ravenel, of South Carolina, through Dr. Morton.

Two Trilobites, and a cast of a third, from the vicinity of Cincinnati, Ohio. Presented by Dr. Dickeson.

Several specimens of Diallage, from Marple, Del. Co., Penn. From Dr. George Smith, through Mr. Cassin.